

A NEW SPECIES OF *ATRICHOPOGON* KIEFFER FROM NORTHERN ARGENTINA (DIPTERA: CERATOPOGONIDAE)¹

Pablo I. Marino² and Gustavo R. Spinelli²

ABSTRACT: *Atrichopogon carpintero*, n. sp. from the Argentinian province of Formosa is described and illustrated from male and female specimens collected with a light trap. The species, easily recognized by the contrasting coloration between the thorax and abdomen, lacks secondary sexual dimorphism. It is compared with the congeners, *A. utricularis* Macfie and *A. homofacies* Spinelli.

KEY WORDS: *Atrichopogon*, new species, Diptera, Ceratopogonidae, northern Argentina

Atrichopogon Kieffer, a worldwide genus, is one of the most speciose in the family Ceratopogonidae, only surpassed in the Neotropics by *Culicoides* Latreille and *Forcipomyia* Meigen. Borkent and Spinelli (2000), in their catalog of the New World ceratopogonids south of the United States of America, listed 75 species for the region, and there has been only one species subsequently described, *Atrichopogon mexicanus* Huerta (2001). Of these species, the following eleven are known to occur in Argentina: *A. albinensis* Ingram and Macfie, *A. balseiroi* Spinelli, *A. casali* Cavalieri and Chiossone, *A. delpontei* Cavalieri and Chiossone, *A. domizii* Spinelli, *A. homofacies* Spinelli, *A. mendozae* Ingram and Macfie, *A. obfuscatus* Ingram and Macfie, *A. obnubilus* Ingram and Macfie, *A. pseudoobfuscatus* Spinelli and *A. talarum* Spinelli (Spinelli, 1998).

The feeding habits of the female adults are poorly known. Some suck haemolymph from blister beetles (Wirth, 1956a, b), while others are pollinivorous or appear to be autogenous. Larvae are aquatic or semiaquatic and are found on the surface of mud, wet wood, or stones, feeding on diatoms and other algae (de Meillon and Wirth, 1991).

Species of *Atrichopogon* form a fairly uniform group as far as their adult morphology is concerned (Debenham, 1973), and very similar species can be recognized as adults only by the male genitalic characters. However, pigmentation patterns appear to be very important in the recognition of many species in Costa Rica (Borkent, pers. comm.).

Through the courtesy of Jorge Williams from the Museo de La Plata, Argentina, we obtained specimens of a very distinctive species of *Atrichopogon* collected with a light trap in the Argentinian province of Formosa, which is here described as a new species.

METHODS

Specimens were slide mounted in Canada balsam and examined, measured

¹ Received on January 6, 2004. Accepted on February 3, 2004.

² División Entomología, Museo de La Plata, Paseo del Bosque s/n, 1900 La Plata, Argentina. E-mails: pabloaguara@yahoo.com.ar and spinelli@museo.fcnym.unlp.edu.ar, respectively.

and drawn using a binocular compound microscope with attached camera lucida. Types of the new species are deposited in the collection of the Division of Entomology, Museo de la Plata, Argentina (MLPA).

Terms for structures follow those used in the Manual of Nearctic Diptera (McAlpine et al., 1981), and for special terms applying to *Atrichopogon* see Wirth (1994). Terms for wing veins follow the system of the Manual of Nearctic Diptera, with modifications proposed by Szadziewski (1996).

Atrichopogon carpinteroi, NEW SPECIES

(Figs. 1-9)

Diagnosis. A medium-size species of *Atrichopogon* with no secondary sexual dimorphism; eight proximal flagellomeres whitish, distal five dark brown; thorax with scutum, scutellum, postscutellum, paratergite, propleuron and anepisternum dark brown, rest of pleura and legs pale yellowish; abdomen pale yellowish, segment 8-10 of female slightly darker; spermatheca large, ovoid with short neck, lightly sclerotized; parameres apparently missing; aedeagus triangular, tapering to cap-like apex, basal arch very low.

Description of male. Head. Vertex, frons dark brown; clypeus brown; proboscis pale. Ommatidia with interfacet spicules, narrowly abutting medially. Antenna (Fig. 1) with flagellomeres 1-8 whitish, bottle-shaped, flagellomeres 9-13 elongated, dark brown, proportions as shown in Fig. 1, flagellomere 13 with basally constricted nipple; flagellomeres with sensillae chaetica and trichodea, without plume setae (Fig. 2); AR 1.20. Maxillary palpus (Fig. 3) pale, darkish at apex; third segment slender, with shallow sensory pit near midlength; segments 4, 5 closely appressed; segment 5 conical-shaped; PR 3.00. Proboscis short, length 0.240 mm; P/H ratio 1.07.

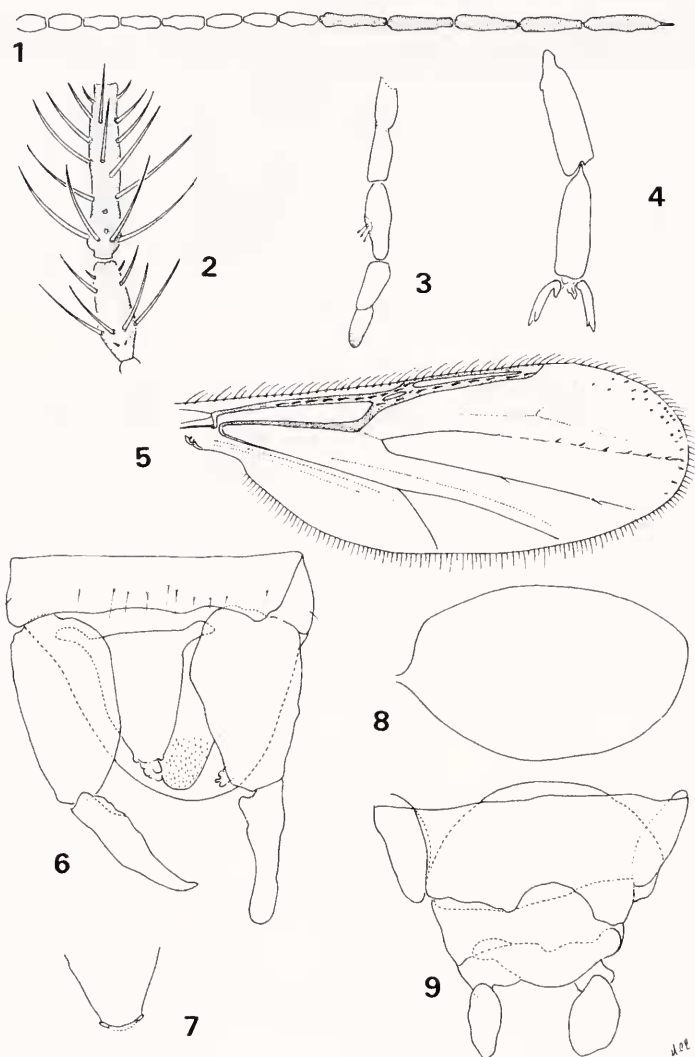
Thorax. Scutum, scutellum, postscutellum, paratergite, propleuron, anepisternum dark brown; rest of pleura pale yellowish; scutum with all setae in dark pits; with lateral suture. Paratergite with one stout seta. Legs uniformly yellowish; hindtibial spur short, hindtibial comb with 7 spines; prothoracic TR 2.91, mesothoracic TR 3.08, metathoracic TR 2.28; claws (Fig. 4) curved, moderately stout, bifid at tip; empodia present. Wing (Fig. 5) plain, without pattern of pigmented membrane; with few macrotrichiae in cell r3, one or two in cell m1; first radial cell reduced, second radial cell well formed, long, narrow; cubital fork proximal to level of costal apex; wing length 0.98 mm; breadth 0.36 mm; CR 0.69. Halter whitish.

Abdomen. Tergites uniformly pale yellowish. Sternites more or less similarly rectangularly shaped. Genitalia (Fig. 6): Segment 9 with tergite moderately elongate, extending to level of apex of gonocoxite; sternite 9 narrow, with single row of setae. Gonocoxite pale yellowish, moderately stout, 1.6 times longer than greatest breadth; gonostylus 0.75 as long as gonocoxite, slender, nearly straight, tip pointed. Parameres apparently missing. Aedeagus triangular, stout, lightly sclerotized, tapering to cap-like tip (Fig. 7); basal arms short, recurved; basal arch very low, extending to 1/10 of total length. Cercus small, lobe-like, not projecting beyond apex of tergite 9.

Female. As for male, only with genital differences; AR 1.27 (1.26-1.28, $n = 2$); PR 2.95 (2.90-3.00, $n = 2$); proboscis length 0.30 mm; P/H ratio 1.33 (1.25-1.41, $n = 2$); wing length 1.14 (1.13-1.14, $n = 2$) mm; breadth 0.44 (0.43-0.46, $n = 2$) mm; CR 0.70 (0.69-0.71, $n = 2$); prothoracic TR 2.96 (2.92-3.00, $n = 2$), mesothoracic TR 3.21 (3.17-3.25, $n = 2$), metathoracic TR 2.43 (2.35-2.50, $n = 2$). Tergites 1-7 pale yellowish, 8-10 slightly darker. Spermatheca large, ovoid with short neck, lightly sclerotized, measuring 0.240 by 0.152 mm (Fig. 8). Sternite 8 without elongate, curved setae. Segments 8-10 as shown in Fig. 9. Cercus pale.

Distribution. *Atrichopogon carpinteroi* n. sp. is known only from the type locality.

Material Examined. Holotype male, allotype female, Argentina, Formosa prov., Estancia La Marcela, 35 km E El Colorado, 27/28-VII-2003, J. Williams, light trap (MLPA); paratype female, same data.



Figs. 1-9. *Atrichopogon carpinteroi*, n. sp. 1-7. male; 8-9. female. 1. flagellum; 2. flagellomeres 8-9; 3. palpus; 4. tarsal claws; 5. wing; 6. genitalia; 7. tip of aedeagus; 8. spermatheca; 9. abdominal segments 8-10. Scale bars = 0.05 mm.

Taxonomic Discussion. Males and females were associated by their similar pigmentation pattern and were collected at the same locality and date. The female of this new species resembles the female of *A. utricularis* Macfie from Costa Rica by virtue of the large, ovoid, lightly sclerotized spermatheca with narrow duct and by the few macrotrichia at the wing tip, but differs by having bifid

tarsal claws (simple in *utricularis*) and by several differences in pigmentation patterns, e.g., proximal eight flagellomeres pale (flagellum nearly entirely dark brown in *utricularis*), abdomen pale yellowish (very dark brown in *utricularis*) and legs pale yellowish (yellowish brown in *utricularis*).

Atrichopogon homofacies Spinelli from Argentina and *A. carpintero* both lack secondary sexual differences. However, the abdomen of *A. homofacies* is pale brown, so that the pigmentation of thorax and abdomen does not contrast, the flagellum is entirely dark brown and only the last three flagellomeres of male flagellum are elongated. In addition, *A. homofacies* differs in the following genital characters: Y-shaped female genital sclerotization; parameres present, fused, and with a blunt tip; aedeagus Y-shaped with higher basal arch and deeply pigmented, stout, pilose gonostylus.

Etymology. The species is named after Diego L. Carpintero from the Museo de La Plata, in recognition of his excellent work recognizing ceratopogonids in alcohol preserved light traps samples.

ACKNOWLEDGMENTS

We would like to acknowledge Jorge Williams for his valuable help collecting insects using light traps in several places of Argentina.

LITERATURE CITED

- Borkent, A. and G. R. Spinelli.** 2000. Catalog of the new World biting midges south of the United States of America (Diptera: Ceratopogonidae). Contributions on Entomology, International 4:1-107.
- Debenham, M. L.** 1973. Four New Guinea and northern Queensland species of *Atrichopogon* Kieffer (Diptera: Ceratopogonidae) with atypical development of the thoracic setae. Journal of the Australian Entomological Society 12:68-77.
- de Meillon, B. and W. W. Wirth.** 1991. The genera and subgenera (excluding *Culicoides*) of the Afrotropical biting midges (Diptera: Ceratopogonidae). Annals of the Natal Museum 32:27-147.
- Huerta, H.** 2001. A new species of the genus *Atrichopogon* Kieffer (Diptera: Ceratopogonidae) from Mexico. Proceedings of the Entomological Society of Washington 103: 373-375.
- McAlpine, J. F., B. V. Peterson, G. E. Shewell, H. J. Teskey, J. R. Vockeroth, and D. M. Wood** (eds.). 1981. Manual of Nearctic Diptera. Volume 1. Agriculture Canada Monograph 27. 674 pp.
- Szadziewski, R.** 1996. Biting midges from Lower Cretaceous amber of Lebanon and Upper Cretaceous Siberian amber of Taimyr (Diptera, Ceratopogonidae). Studia Dipterologica 3:23-86.
- Spinelli, G. R.** 1998. Ceratopogonidae, pp. 314-326. In J.J. Morrone and S. Coscarón (dirs.), Biodiversidad de artrópodos Argentinos. Una perspectiva biotaxonómica. Ediciones Sur. La Plata, Argentina. 599 pp.
- Wirth, W. W.** 1956a. The biting midges ectoparasitic on blister beetles (Diptera: Heleidae). Proceedings of the Entomological Society of Washington 58:15-23.
- Wirth, W. W.** 1956b. The heleid midges involved in the pollination of rubber trees in America (Diptera: Heleidae). Proceedings of the Entomological Society of Washington 58:241-250.
- Wirth, W. W.** 1994. The subgenus *Atrichopogon* (*Lophomyidium*) with a revision of the Nearctic species (Diptera: Ceratopogonidae). Insecta Mundi 8:17-36.